

Final Review 4 '0910

1) Use the distributive property to rewrite the expression.

a) $-6(3x+9)$

b) $\frac{-5}{6}(12x-42)$

2) Use the order of operations to evaluate each expression.

a) $10 * 5 - 35 + 5 + 7 * (-8)$

b) $5(-7+2) + 23 - 12$

c) $\frac{8 + 7 * (-5+2)}{13 + 4^2}$

3) Solve for x in the following equations. Show all steps and check your answer

a) $5x - 24 = 30$

b) $2(x-8) = 6x + 13$

c) $\frac{x-7}{3} = 12$

d) $\frac{3(x-4)}{2} = 4(x+6)$

e) $\frac{x-3}{4} = \frac{x+2}{5}$

f) $\frac{4}{x} = \frac{5}{8}$

4) Solve each inequality and plot the solution on a number line.

a) $3x + 5 \leq 23$

b) $-3x - 4 > 11$

c) $5(x-8) \leq 3x + 12$

5) Find the function value without using your calculator if $f(x) = 3x+2$

a) $f(3)$

b) $f(4)$

c) $f(-3)$

6) Given the function $f(x) = 3x+2$, find the value of x if $f(x) = 50$

- 7) The table below lists the percentages of the U.S. population living in rural areas in the years given.

Year	Rural Population
1850	84.7
1870	74.3
1890	64.9
1910	54.3
1930	43.8
1950	36.0
1970	26.4

- Use graph paper to make a scatter plot of the data.
- Using this scatter plot, find an equation of best fit.
- Write a complete sentence describing the “real-world” meaning of the slope and the y-intercept.
- Use your equation to predict when 50% of the US population lived in rural areas.
- According to your model (equation) when will no one live in rural areas? Do you think this will ever happen? Explain.